

picked up by major newspapers.

Bloggers see their Web sites as complements to scholarship rather than substitutes. "I can't really see any negative effects from that," Schiff says. "And the obvious positive effect is that it exposes people to things that otherwise might only get published in academic journals."

Still, it's not clear that blogging can enhance a career. Most, if not all, economics bloggers write from the lofty position of tenure. But not all bloggers in every academic discipline do. Rodrik probably wouldn't blog if he were seeking tenure at a top academic institution. "I guess I'm sufficiently established that I don't give a damn," he says.

The blogging wave may have crested but there's always

room for another voice, however difficult to discern among the cacophony. "For someone like me who is less well known [than Krugman or Rodrik]," Schiff says, "it takes a much longer time to build up a readership."

As technology evolves, so will the blog, its authors, and dynamic audience. The whole enterprise may embody the ideal of the influential economist Friedrich Hayek, who believed in the power of decentralized, unplanned activity — "spontaneous order." While there's no coordination per se, it's kind of a market where rules emerge, Craig Newmark says.

Perhaps it's not surprising that some of the Austrian thinker's devotees have a blog called Café Hayek. **RF**

Is Rational Man Extinct?

Searching for *Homo Economicus*

BY STEPHEN SLIVINSKI

The audience that gathered in the ornate concert hall for that night's ceremony probably noticed the similarities of the two guests of honor standing next to each other on stage. Both wore tuxedos accented by white bowties and vests as was appropriate for the occasion. Both wore glasses and were about the same height.

But the audience probably noticed a difference too. The guest of honor standing on the right sported a ponytail that reached almost halfway down the back of his tuxedo jacket — a rare sight at a ceremony like this.

Delving into each man's biography, the spectators might have noticed more differences. The man on the left was born in Tel Aviv and studied psychology as an undergraduate because it struck him as more practical than philosophy. The ponytailed man was an economist born in Wichita, Kan., who, before pursuing the study of economics, started out his academic life in electrical engineering because he wanted to avoid the harder math classes required of physics students.

Yet there was an overriding similarity that evening, and it was the reason for the tuxedos. Both men were about to be awarded the Nobel Prize in Economics.

The date was Dec. 10, 2002. The man on the left was Daniel Kahneman; the man on the right was Vernon Smith. Both are regarded as academic pioneers for their use of laboratory experiments as a way to test the basic premises of modern economics. Yet the conclusions that each came to over decades of their own research appear at odds with each other. At issue is a fundamental question that cuts to the root of economic methodology: Do people act rationally in a market setting and what does that mean for the study of economics?

Or, to put it another way: Did *Homo economicus* ever walk the earth and, if so, is he now extinct?

Homo economicus is a metaphorical species of human who is able to, as economists say, optimize. He exhibits rationality in the economic sense by making decisions, even in uncertain situations, based mainly on self-interest and a strong grasp of the alternatives at hand. The mathematic and analytical models that are the stock in trade of modern economics rely on the prevalence of this form of human for markets to reach equilibrium.

The group of researchers who call themselves "behavioral economists," like Kahneman, believe people don't often act that way in reality and have run multiple experiments to try to prove it. On the other side of the debate are Smith and his colleagues — the "experimental economists" — who have been able to show that markets can reach equilibrium when subjected to the right sort of tests in a laboratory. Yet, if people are indeed fundamentally irrational in the economic sense, would they really be able to make the kinds of decisions which help bring the market to equilibrium?

The debate about whether there ever was such a creature as *Homo economicus* has recently broken into the mainstream media discussion about how economists view the world. It's a discussion that has been at least 50 years in the making and probably won't end soon.

Efficient Markets and Irrational Men

Vernon Smith notes that his brand of experimental economics began with a bout of insomnia. He was teaching at Purdue in 1955, and in the middle of one particular night he began to think about an experience he had at Harvard as a graduate student.

Economist Edward Chamberlin had run a series of experiments with various groups of Harvard students when Smith was pursuing his Ph.D. Chamberlin would tell some students in this experiment that they were buyers and the rest sellers. He would then give them a card with a number on it. For the sellers, that value represented the minimum selling price for the unit of good they needed to sell; for the buyers, it stood for the maximum buying price. On paper, these values corresponded to places on a hypothetical supply or demand curve. Then Chamberlin let the students circle the room and negotiate whatever contract they wanted. Once a bargain had been struck between a buyer and a seller, the transaction was recorded on the classroom blackboard.

What Chamberlin had in mind was an experimental test of competitive equilibrium theory, which suggests a market will converge on a single price where supply and demand overlap. Instead, his experiments produced trades at substantially different prices, and the observed average price was actually lower than equilibrium theory would predict.

The paper Chamberlin published on the experiments went virtually unnoticed by the economics profession. But Vernon Smith had taken part in one of these experiments and thought there might be something more to them.

"So, there I was, wide awake at 3 a.m., thinking about Chamberlin's silly experiment," Smith recounted in a 1991 essay. "The thought occurred to me that the idea of doing an experiment was right, but what was wrong was that if you were going to show that competitive equilibrium was not realizable ... you should choose an institution of exchange that might be more favorable to yielding competitive equilibrium. Then when such an equilibrium failed to be approached, you would have a powerful result."

Smith's experiment made two main changes to Chamberlin's design. The first was in structure: Smith decided to use a "double auction" mechanism in which buyers and sellers called out their bids and the successful trades were recorded by the moderator, an arrangement that more closely mimicked a real-life commodity or stock exchange. He also tried the experiment with the same group of people for multiple rounds to allow them to learn from their previous experience.

A competitive equilibrium emerged from this more structured market environment. Smith initially didn't believe the results so he tried it with another set of students. And then another. Over the following several years, he found himself producing experimental results that exhibited stunning consistency and robustness. Competitive equilibrium theory was being vindicated.

Meanwhile, a political scientist named Herbert Simon at Carnegie Mellon University published a 1955 *Quarterly Journal of Economics* article titled, "A Behavioral Model of Rational Choice." With this essay, Simon opened up a line of inquiry that for years to come would challenge the foundation of classical economics.

"Traditional economic theory postulates an 'economic man,' who, in the course of being 'economic' is also 'ration-

al,'" wrote Simon. "Rather, I shall assume that the concept of 'economic man' ... is in need of fairly drastic revision." The means by which Simon did this was to bring into the analysis some insights from psychology. He posited that humans have natural limits on their cognitive ability. So instead of supposing a rational man who can instantly reason to the optimal solution to a problem, Simon thought economists should define the agents within their models as exhibiting "bounded rationality." This uniquely human form of rationality is one in which a person arrives at a solution that may not be perfect in a computational sense but is simply good enough to satisfy them. "Because of the psychological limits of the organism ... actual human rationality-striving can at best be an extremely crude and simplified approximation to the kind of global rationality" that is often implied in economics models, Simon wrote.

Simon received a Nobel Prize in Economics for this approach in 1978, making him the first noneconomist to win that prize. But the research program that eventually became known as behavioral economics didn't really come into its own until psychologist Daniel Kahneman and his co-author Amos Tversky (a cognitive psychologist based at Stanford University before his death in 1996), began to make their mark on the economics profession.

One of the first high-profile articles their collaboration produced appeared in the journal *Econometrica* in 1979 — a contribution that would turn out to be the most-cited article in that journal's history. In it, the authors proposed a new way to look at how people make decisions. They too suggested that people do not weigh risky choices the way a computer (or *Homo economicus*) would.

They tested this insight with a series of experiments in which participants were asked if they would accept certain gambles. The result was that people's answers tended to diverge from what they would be if the respondents were optimally assessing the true risks of each gamble. That's because, Kahneman and Tversky posited, people don't think in terms of traditional probability theory. People instead think in terms of the prospects for losing what they already have.

"If you think in terms of major losses, because losses loom much larger than gains — that's a very well-established finding — you tend to be very risk-averse," Kahneman told *Forbes* in 2002.

"I'll give you an example: Suppose someone offered you a gamble on the toss of a coin. If you guess right, you win \$15,000; if you guess wrong, you lose \$10,000. Practically no one wants it. Then I ask people to think of their wealth, and now think of two states of the world. In one you own [your current assets] minus \$10,000 and in the other you own [your current assets] plus \$15,000. Which state of the world do you like better? Everybody likes the second one. So when you think in terms of wealth — the final state — you tend to be much closer to risk-neutral than when you think of gains and losses."

Kahneman's conclusions spawned a host of articles that

sought to displace the old assumptions about rationality in economics. The collection of observations were grouped loosely under the umbrella of what came to be known as “prospect theory.”

After the publication of the *Econometrica* article, Kahneman began collaborating with economist Richard Thaler, currently of the University of Chicago, on a few experiments that were meant to flesh out the boundaries of prospect theory. What they and their colleagues discovered would stand for about 20 years as one of the more enduring insights of behavioral economics. New research, however, has begun to call into question the robustness of some of these results.

The Endowment Effect

Imagine that you decide to participate in one of these behavioral economics experiments. When you show up at the lab, you are given either a ballpoint pen or a coffee mug. Which one you get is decided by purely random chance. Then you're asked if you'd like to trade what you've been “endowed” — that's economist-speak for what you've been given. In this case, say it's the mug. If you decide to give up the mug, you'll get the pen which, you are told, is of equal value.

Behavioralists predict, based on the many versions of this experiment they've conducted, that you probably won't trade the mug for the pen. But it's not because the mug is inherently nicer than the pen. In fact, when the option to take home the mug is given to those who have the pen, most of them decide not to trade either.

According to standard economic theory, that shouldn't happen. Since the goods were randomly distributed, there should be much more trading in these experiments than actually occurs.

Behavioral economists call this the “endowment effect.” It predicts that the subjects in the experiment would have an inherent aversion to losing what they already have. Parting with the endowed good is perceived by the mug holders as a loss greater than the potential gain from acquiring another good of equal value. If true, this could tarnish some of the classic notions about the efficiency of markets and the ability of people to trade rationally within them. A world in which some trades don't occur simply because too many people are scared of parting with their goods would be one with many suboptimal economic outcomes.

Economists Charles Plott of Caltech — a pioneer in experimental economics — and Kathryn Zeiler of the Georgetown University Law Center, were able to duplicate the results of these experiments (particularly one by Kahneman and Thaler, but also one by their occasional co-author, Jack Knetsch, currently of Simon Fraser University). But when they did so, they began to notice some interesting things.

For instance, in the original experiments, subjects were told to raise their hand when they wanted to trade their good for the other good. When Plott and Zeiler ran the

same experiment, they noticed that subjects were looking to others for cues. “When we asked them after the experiment how they made their decision, many of them said they looked around the room to see what other people were doing,” says Zeiler. So, Plott and Zeiler decided to rerun the experiment and introduce a secret ballot in which players mark their decision to trade or not on a note card.

They didn't take for granted any other element of the original experiments either. They even played around with the procedures by which the good was handed to the experiment's participants. In the original experiment, the subjects were told, “I'm giving you the mug. It is a gift. You own it. It is yours.” But Plott and Zeiler speculated that might have signaled a certain high level of value for the mug. Besides, the subjects might not know if the pen they might get as a result of the trade is really any good. So, Plott and Zeiler simply told the participants: “The mug is yours. You own it.”

They also adjusted for other possible factors that might have skewed the original results. The participants got to inspect the other good before they made their choice. None of these were options given to the participants in early endowment effect experiments of Kahneman and Knetsch.

“Once you control for these other things that might be causing the gaps — even if you leave in place all conditions necessary to trigger prospect theory — you don't see gaps anymore,” says Zeiler. “If endowment effect theory was correct, we should still see those exchange asymmetries.”

It's a good example of how rules and institutions can change an experiment's outcome. In fact, that's a crucial element in the debate between behavioralists and experimentalists. The experimentalist camp's main critique is that modern behavioralists are interested mostly in uncovering deviations from the textbook versions of rationality, not in discovering whether there is something unique about markets that help people reach socially beneficial outcomes. For instance, some behavioral experiments don't give the subjects an opportunity to learn from their mistakes in the context of a market mechanism or a trading situation that is repeated more than once. Yet markets in the real world provide no shortage of educational experiences and repeat encounters.

Rediscovering *Homo Economicus*

“In principle, as I see it, experimental market economics and behavioral economics are complementary,” writes Vernon Smith in his most recent book. The man who sought to make economics a more experimental enterprise in the first place instead suggests that the goal of experiments should be to more closely approximate real-world markets.

In many of Smith's own experiments, the markets in the laboratory reach a competitive equilibrium even though the traders don't consciously realize how optimal their behavior really was. As he wrote in 1991, “subjects are not aware that they are achieving maximum profits collectively and

individually, in equilibrium, and, in fact, deny this when asked.”

Humans do seem to optimize, in the aggregate, over a long time period. Experimental research provides solid evidence that a structured market environment is important to this process. In the real world, laws and trading procedures are essential for markets to function well. And experiments can give us critical insight about how best to structure those rules.

Progress needs market participants who can learn from

experience too. “People can make a lot of cognitive ‘errors’ on the way to creating a new market,” writes the once-ponytailed Smith. (Eyewitness accounts confirm he opted for shorter hair sometime in 2007.) “What are important about individual choices are the decisions that cause people across time and generations to change tasks, locations, and directions in an effort to better themselves in response to market prices.”

In other words, there is still a little *Homo economicus* in all of us. We just have to know how to lure him out of hiding. **RF**

READINGS

Kahneman, Daniel, and Amos Tversky. “Prospect Theory: An Analysis of Decision and Risk.” *Econometrica*, March 1979, vol. 27, no. 2, pp. 263-291.

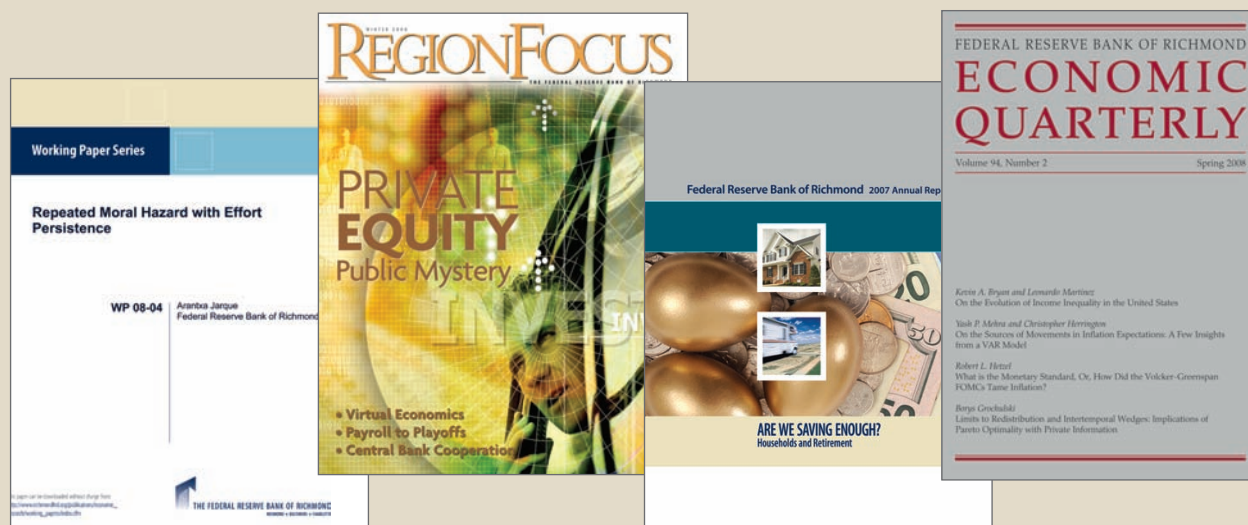
Plott, Charles, and Kathryn Zeiler. “Exchange Asymmetries Incorrectly Interpreted as Evidence of Endowment Effect Theory and Prospect Theory?” *American Economic Review*, September 2007, vol. 97, no. 4, pp. 1449-1466.

Simon, Herbert. “A Behavioral Model of Rational Choice.” *Quarterly Journal of Economics*, February 1955, vol. 69, no. 1, pp. 99-118.

Smith, Vernon L. *Bargaining and Market Behavior: Essays in Experimental Economics*. New York: Cambridge University Press, 2000.

Smith, Vernon L. *Rationality in Economics: Constructivist and Ecological Forms*. New York: Cambridge University Press, 2008.

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